Biodiversity indicators of HELCOM and their implementation to the Russian waters of the Baltic Sea (the Gulf of Finland)

Alexander Antsulevich (SPb State University),
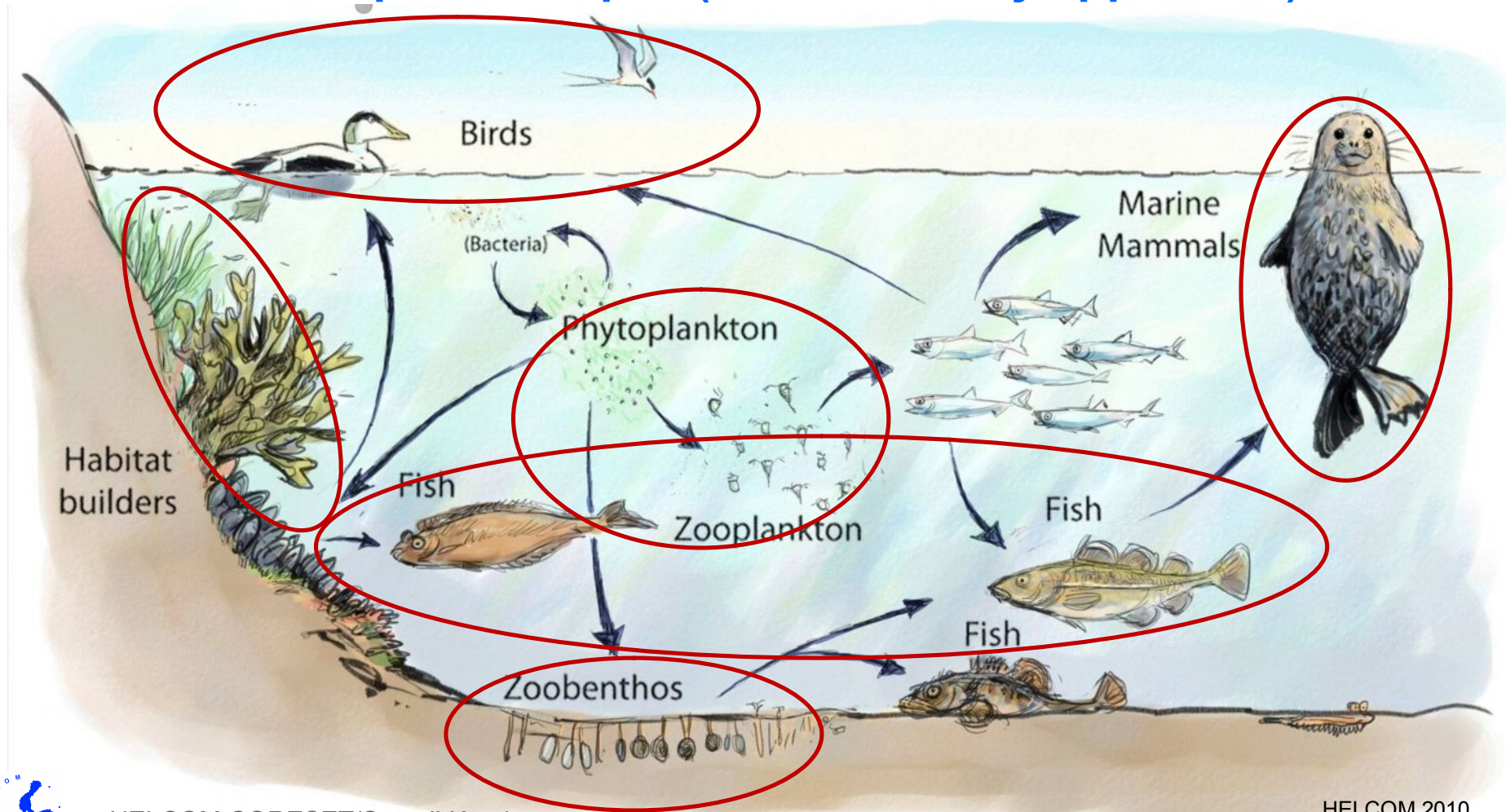*Samuli Korpinen (HELCOM Secretariat, Project CORESET)*

The core indicators should measure the marine environment

1. Complex; 2. Equal (similar, widely applicable)

Birds

(Bacteria)

Marine Mammals

Phytoplankton

Habitat builders

Fish

Zooplankton

Fish

Zoobenthos

Fish

HELCOM 2010

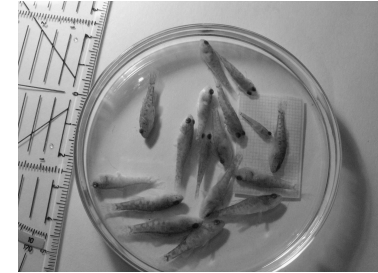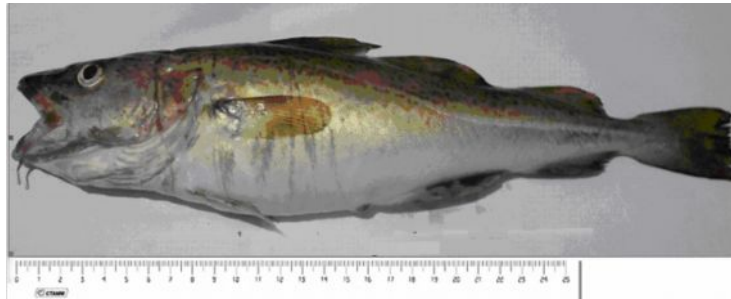# The CORESET proposal for HELCOM biodiversity core indicators

	Proposed core indicators
14.	Population growth rates, abundance and distribution of marine mammals
15.	Pregnancy rates of marine mammals
16.	Nutritional status of seals
17.	Number of drowned mammals and waterbirds in fishing gears
18.	White-tailed eagle productivity
19.	Abundance of waterbirds in the wintering season
20.	Abundance of waterbirds in the breeding season
21.	Number of waterbirds being oiled annually
22.	Abundance of key fish species
23.	Abundance of fish key functional groups
24.	Proportion of large fish in the community
25.	Abundance of sea trout spawners and parr
26.	Abundance of salmon spawners and smolt
27.	Zooplankton mean size and total abundance
28.	State of the soft-bottom macrofauna communities
29.	Lower depth distribution limit of macrophyte species
30.	Population structure of long-lived macrozoobenthic species
31.	Cumulative impact on benthic habitats
32.	Extent, distribution and condition of benthic biotopes
33.	Trends in arrival of new non-indigenous species

W

S ‰

E

Vyborg

Primorsk

Haapasaari Isl.

Beresovy Isl.

Zelenogorsk

Gogland Isl.

Moshny Isl.

Seskar Isl.

Kronshtadt

St.-Petersburg

Bolshoy Tyters Isl.

Sosnovy Bor

Russia

Luga
Bay

Ust-Luga

Narva Bay

**Not every indicator suitable for the Central Baltic
is applicable as well to the E part of the Gulf of Finland**

One beach seine catch (N coast of Neva Bay)

Proportion of **cyprinids** (*Carassius auratus*) and **piscivores** (*Percottus glehnii*)

Alien!!!

Photo of A.E.Antsulevich

Alien species arrivals per time unit is **core indicator.** GES is zero. (*Gulf of Finland, Neva Bay*)

Percottus glehnii

Eriocheir sinensis

Proterorhinus marmoratus

Tenellia adspersa
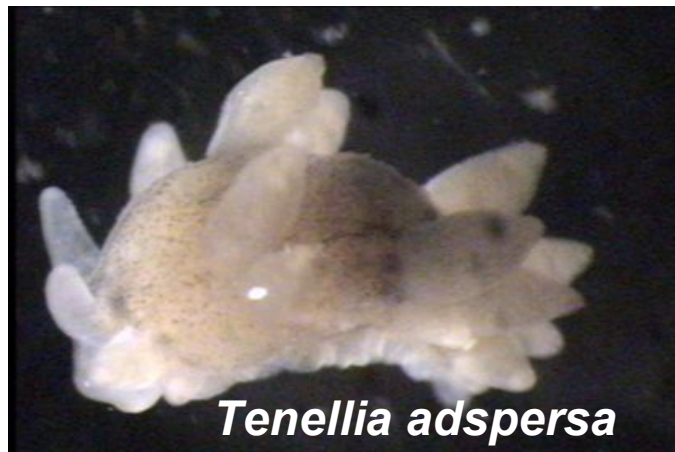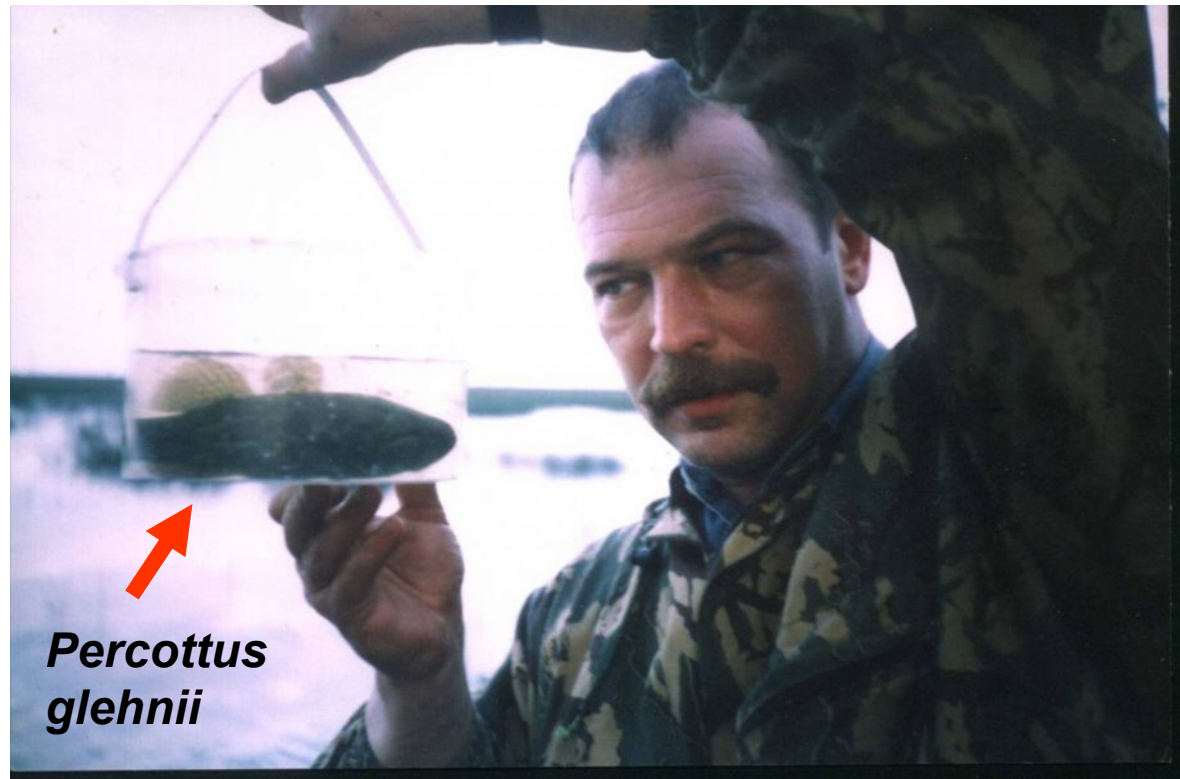
Alien species also changes and impacts the biodiversity

Photos of A.E.Antsulevich

Biodiversity indicators should be implemented for environmental assessment

photos of A.E.Antsulevich

No coast – no coastal fish and coastal vegetation

underwater habitats ↓

Aboriginal species
"*Fisherman professional*" is declining!

That is why indicators are needed.

Thank You for attention

Luga Bay (the Gulf of Finland)